What is claimed is:

1. An optical information recording medium comprising

a substrate;

a recording layer;

a reflecting layer; and

a layer containing a mixture of carbide and oxide, disposed over a surface of the reflecting layer facing to the recording layer,

wherein the carbide is a carbide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W, and the oxide is an oxide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W.

2. An optical information recording medium according to Claim 1, wherein the optical information recording medium comprises:

the substrate which is transparent;

a first dielectric layer disposed above the substrate;

the recording layer disposed above the first dielectric layer;

a second dielectric layer disposed above the recording layer;

a barrier layer disposed above the second dielectric layer; and

the reflecting layer disposed above the barrier layer, wherein the barrier layer is the layer containing a mixture of carbide and oxide, where the carbide is a carbide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W, and the oxide is an oxide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W.

3. An optical information recording medium according to Claim 1, wherein the optical information recording medium comprises:

the substrate which is one of transparent and opaque;

the reflecting layer disposed above the substrate;

a barrier layer disposed above the reflecting layer;

a second dielectric layer disposed above the barrier layer;

the recording layer disposed above the second dielectric layer; and

a first dielectric layer disposed above the recording layer,

wherein the barrier layer is the layer containing a mixture of carbide and oxide, where the carbide is a carbide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W, and the oxide is an oxide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W.

4. An optical information recording medium according to Claim 1, wherein the optical information recording medium comprises:

the substrate which is transparent;

a first dielectric layer disposed above the substrate;

the recording layer disposed above the first dielectric layer;

a second dielectric layer disposed above the recording layer; and

the reflecting layer disposed above the second dielectric layer,

wherein the second dielectric layer is the layer containing a mixture of carbide and oxide, where the carbide is a carbide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W, and the oxide is an oxide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W.

5. An optical information recording medium according to Claim 1, wherein the optical information recording medium comprises:

the substrate which is one of transparent and opaque;

the reflecting layer disposed above the substrate;

a second dielectric layer disposed above the

substrate;

the recording layer disposed above the second dielectric layer; and

a first dielectric layer disposed above the recording layer,

wherein the second dielectric layer is the layer containing a mixture of carbide and oxide, where the carbide is a carbide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W, and the oxide is an oxide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W.

6. An optical information recording medium according to Claim 1, wherein the reflecting layer contains Ag.

7. An optical information recording medium according to Claim 1, wherein the carbide has a melting point of 550°C or higher.

8. An optical information recording medium according to Claim 2, wherein the barrier layer has a thickness of 2nm to 10nm.

9. An optical information recording medium according to Claim 3, wherein the barrier layer has a thickness of 2nm to 10nm.

10. An optical information recording medium according to Claim 1, wherein the recording layer contains a phase-change recording material which is formed of a film of metal selected from Cu, Cr and Ti.

11. An optical information recording medium according to Claim 1, wherein the recording layer contains a phase-change recording material which contains at least SbTe with Sb and Te each in the following range: $70 \leq Sb \leq 80$ and $20 \leq Te \leq 30$.

12. An optical information recording medium according to Claim 1, wherein the recording layer contains a phase-change recording material which contains one of a single substance and a mixture of GeTe and Sb_2Te_3.

13. An optical information recording medium according to Claim 1, wherein the mixture of carbide and oxide has a composition ratio of carbide to oxide being from 90/10 to 25/75 in terms of % by weight.

14. An optical information recording medium according to Claim 13, wherein the mixture of carbide and oxide has a composition ratio of carbide to oxide being from 80/20 to

50/50 in terms of % by weight.

15. An optical information recording medium according to Claim 1, wherein the optical information recording medium comprises:

the substrate which is transparent, disposed on the side from where an incident light is applied; and

at least two or more sets of the recording layer and the reflecting layer.

16. An optical information recording medium according to Claim 15, wherein the optical information recording medium comprises:

the substrate which is transparent;

a first dielectric layer disposed above the substrate;

the recording layer disposed above the first dielectric layer;

a second dielectric layer disposed above the recording layer;

a barrier layer disposed above the second dielectric layer;

the reflecting layer; and

one or more sets of layers of the first dielectric layer, the recording layer, the second dielectric layer, the barrier layer, and the reflecting layer, disposed in this order,

wherein each barrier layer is the layer containing a mixture of carbide and oxide, where the carbide is a carbide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W, and the oxide is an oxide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W.

17. An optical information recording medium according to Claim 15, wherein the optical information recording medium comprises:

a first substrate disposed on the side from where an incident light is applied;

a first dielectric layer disposed above the first substrate;

the recording layer disposed above the first dielectric layer;

a second dielectric layer disposed above the recording layer;

a barrier layer disposed above the second dielectric layer; and

the reflecting layer disposed above the barrier layer; and

a second substrate disposed on the opposite side to where an incident light is applied;

a reflecting layer disposed above the second substrate;

a barrier layer disposed above the reflecting layer;

a second dielectric layer disposed above the barrier layer;

a recording layer disposed above the second dielectric layer; and

a first dielectric layer disposed above the recording layer,

wherein each barrier layer is the layer containing a mixture of carbide and oxide, where the carbide is a carbide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W, and the oxide is an oxide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W..

18. An optical information recording medium according to Claim 1, wherein the layer containing a mixture of carbide and oxide is at least one of

a layer being obtainable with sputtering of a carbide target in an inert atmosphere incorporated with oxygen, and

a layer being obtainable with sputtering of a mixed carbide/oxide target in an inert atmosphere.

19. An optical information recording medium according to Claim 18, wherein the layer containing a mixture of carbide and oxide is a layer being obtainable with

sputtering of the mixed carbide/oxide target in an inert atmosphere, in which a ratio of carbide target to oxide target is from 90/12 to 25/75 in terms of % by weight.

20. An optical information recording medium according to Claim 18, wherein the target has a resistivity of 0.5Ωcm or less.

21. A process for forming an optical information recording medium comprising a step of:

disposing, on a substrate, at least a recording layer, a reflecting layer and a layer containing a mixture of carbide and oxide where the carbide is a carbide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W, and the oxide is an oxide of at least one metal selected from Ti, Zr, V, Nb, Ta, Cr, Mo and W,

wherein the step of disposing further comprises one of:

sputtering with a carbon target in an inert atmosphere incorporated with oxygen so as to form the layer containing a mixture of carbide and oxide; and

sputtering with a mixed carbide/oxide target in an inert atmosphere so as to form the layer containing a mixture of carbide and oxide,

wherein the layer containing a mixture of carbide and oxide is disposed over a surface of the reflecting layer

facing to the recording layer.

22. A process for forming an optical information recording medium according to Claim 21, wherein the disposing step comprises sputtering with a carbon target in an inert atmosphere incorporated with oxygen so as to form the layer containing a mixture of carbide and oxide.

23. A process for forming an optical information recording medium according to Claim 21, wherein the target has a resistivity of 0.5Ωcm or less, and the sputtering is one of DC discharge sputtering and DC discharge sputtering with a pulsed waveform.